

ABSTRACT OF THE DISCLOSURE

A torque transfer mechanism having a multi-plate friction clutch connecting a pair of rotary members and a electrohydraulic clutch actuator for controlling engagement of the friction clutch. The clutch actuator includes a hydraulic pump, a hydraulically-actuated rotary operator, and a ball ramp mechanism. The hydraulic pump draws low pressure fluid from a sump and delivers high pressure fluid to a series of actuation chambers defined between coaxially aligned first and second components of the rotary operator. The magnitude of the fluid pressure delivered to the actuation chamber controls angular movement of the second component relative to the first component for energizing the ball ramp mechanism. The ball ramp mechanism applies a clutch engagement force on the friction clutch assembly, thereby transferring drive torque from the first rotary member to the second rotary member. A hydraulic control system adaptively regulates the fluid pressure delivered to the actuation chamber.